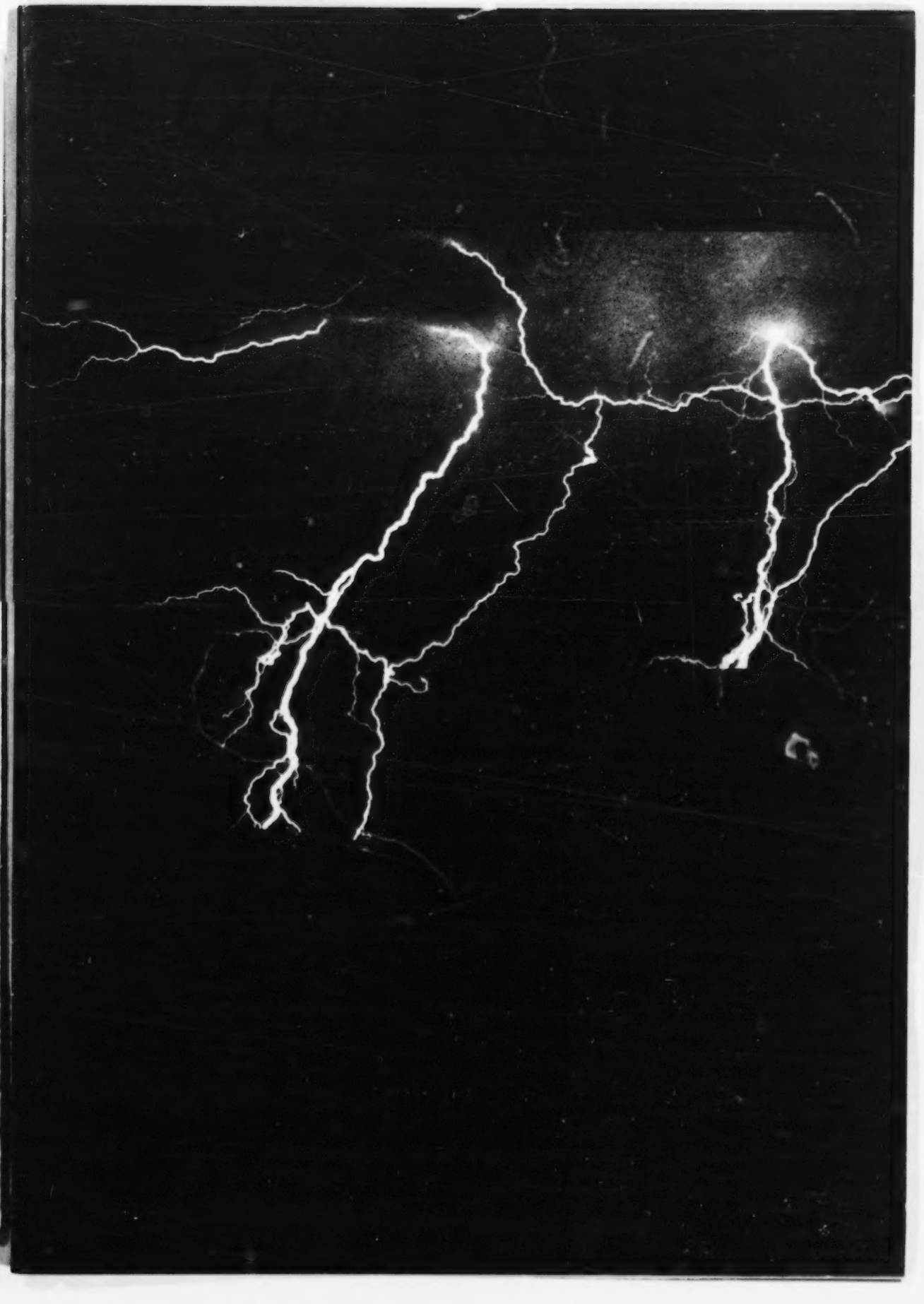


UNEP

3 Editorial
Klaus Toepfer, Executive Director, UNEP

4 Biological backbone
HE Hon Mwai Kibaki MP, EGH, President and Commander-in-Chief of the Armed Forces of the Republic of Kenya

7 Benefits beyond boundaries
Nelson R. Mandela and HM Queen Noor, patrons of the Vth IUCN World Parks Congress

8 Common inheritance
Timothy E. Wirth, President of the United Nations Foundation

Tommy Candy/UNEP/Topham

Milan/UNEP/Topham

9 Beauty or beast?
Yolanda Kakabadse, President of IUCN–The World Conservation Union

10 Wonders of the world
Seema Paul, Senior Program Officer for Biodiversity, United Nations Foundation

11 Protecting heritage
Francesco Bandarin, Director of the UNESCO World Heritage Centre

13 People

14 Parks and participation
Chief Emeka Anyaoku, President of WWF International, and Dr Claude Martin, Director General of WWF International

16 At a glance: Protected areas

18 Profile: Harrison Ford
Internationally renowned actor and conservationist

19 Scorecard, catalyst, watershed
Kenton Miller, Chair of the IUCN World Commission on Protected Areas, and Achim Steiner, IUCN Director General

20 Coral Reef Fund

21 Coral jewels
Melinda Kimble, Vice President for Program, United Nations Foundation

22 Reef knots
Mark Collins, Director of the UNEP World Conservation Monitoring Centre

24 Brief window for biodiversity
Russell A. Mittermeier, President of Conservation International, and Gustavo A.B. da Fonseca, Executive Vice President

26 Books and products

27 Conservation amid conflict
Eulalie Bashige Baliruhya, Director General of the Congolese Institute for Nature Conservation

Gerecke/UNEP/Topham

28 News

29 Green, red or black?
Djuna Ivereigh, journalist, Indonesia

30 Keeping faith with nature
Victoria Finlay, media consultant for the Alliance of Religions and Conservation

32 Make parks not war
Rebecca M. Nyabato, student at the University of Kinshasa, Democratic Republic of the Congo, and Vera Okatsa, Kenya

Our **Planet**,
the magazine of the
United Nations Environment Programme (UNEP)
PO Box 30552, Nairobi, Kenya
Tel (2542) 621 234; fax 623 927; telex 22068 UNEP KE
e-mail: cpinfo@unep.org
www.unep.org

ISSN 1013-7394

Director of Publication: Eric Falt
Editor: Geoffrey Lean
Coordinator: Naomi Poulton
Special Contributor: Nick Nuttall
Circulation Manager: Manyahleshal Kebede
Design: Roger Whitaker
Web Editor: Chris Cypert
Production: Banson
Printed in the United Kingdom

Front cover: Mark Lericchia/UNEP/Topham

This issue of *Our Planet* has been made possible by the generosity of the United Nations Foundation/Better World Fund.

The contents of this magazine do not necessarily reflect the views or policies of UNEP, the United Nations Foundation or the editors, nor are they an official record. The designations employed and the presentation do not imply the expression of any opinion whatsoever on the part of UNEP or the UN Foundation concerning the legal status of any country, territory or city or its authority, or concerning the delimitation of its frontiers or boundaries.

The non-copyrighted contents of this magazine may be reprinted without charge provided that ***Our Planet*** and the author or photographer concerned are credited as the source and the editors are notified in writing and sent a voucher copy.

Our Planet welcomes articles, reviews, illustrations and photos for publication but cannot guarantee that they will be published. Unsolicited manuscripts, photographs and artwork will not be returned.

Subscriptions: If you wish to receive ***Our Planet*** on a regular basis and are not currently on the mailing list, please contact Mani Kebede, Circulation Manager, ***Our Planet***, for subscription details, giving your name and address and your preferred language (English, French or Spanish).

Change of address: Please send your address label together with your new address to: Mani Kebede, Circulation Manager, ***Our Planet***, UNEP, PO Box 30552, Nairobi, Kenya.

This magazine is printed using vegetable-based inks on paper made from 100 per cent recycled waste material. It is bleached without any damage to the environment.

BEST COPY AVAILABLE

UNEP

From the desk of

KLAUS TOEPFER
United Nations Under-Secretary-General and Executive Director, UNEP

If you have a moment, and wonder about whether listing important tracts of land as World Heritage sites and putting other areas under protection is worthwhile, then flick through our latest *Global Environment Outlook* to page 149.

Here, satellite images of Iguazu National Park in Argentina on the border with Brazil – covering 1973 and 2000 – present a compelling argument.

On the right of a squiggly black line marking the frontier of the Park – in the protected area of this World Heritage site – much of one of the last remnants of the highly endangered Paranaense forest remains intact: it is a haven for 68 species of mammals, 38 of reptiles and 18 of amphibians, many of which are threatened or vulnerable. On the left – in the unprotected area – heavy logging and land clearance have denuded it. The modern growth of protected areas across the world is one of the environmental movement's great success stories. From the establishment in 1872 of Yellowstone National Park in the United States, the number of protected areas has mushroomed to more than 102,000 covering over 18.8 million square kilometres, or more than 12.6 per cent of the Earth's land surface. It is an area bigger than India and China combined. Protected areas cover an area greater than that under permanent arable crops. Meanwhile the number of specially safeguarded natural World Heritage sites has climbed to 149 worldwide.

Key targets

But the story is not over and there is still much to do. Currently less than 1 per cent of the marine environment is under protected area status. Given the importance of the coastal zone for fisheries and tourism, this is a failing we must urgently address – not least because establishing an effective system of marine protected areas by 2015 is among the key targets and timetables in the Plan of Implementation of the 2002 World Summit on Sustainable Development (WSSD).

Other crucial issues on the table this September at the Vth IUCN World Parks Congress in Durban, Republic of South Africa, include how to improve financing so as to improve management of protected areas, particularly in developing countries. Delegates are also focusing on Africa and the environmental component of the New Partnership for African Development. One key issue is the damage being caused by alien species such as water hyacinth, Nile cabbage and the Kariba weed: some experts estimate that the damage to Africa's wetlands alone – in dwindling fisheries for example – may be running into billions of dollars annually.

Major contributions

UNEP's World Conservation Monitoring Centre is making two major contributions to the Congress: the United Nations List of Protected Areas, and a draft assessment entitled the State of the World's Protected Areas.

We are also concerned that protected areas could become islands in a sea of environmental degradation, even where – as in many regions – they are working well to conserve waterways, wildlife upon which local people depend for food and medicines, and other so called 'ecosystem services'.

The challenge is to link them more widely into the broader thrust of sustainable development so that good management does not remain isolated but guides the management of land beyond the borders of parks and reserves. Here we will need greater awareness and bolder, stronger partnerships between local people and communities including indigenous people, local, regional and national governments, donors and organizations like UNEP and IUCN–The World Conservation Union.

Income generation

The ability of protected areas to help the fight against poverty and deliver sustainable development cannot be overestimated.

Costa Rica's protected areas, for example, help to generate well over $300 million from tourism every year. Within three years of St Lucia's fishing grounds being listed as 'no take zones' in 1995, commercially important stocks had doubled in the adjacent waters, generating valuable exports for the country and a source of important protein for its people.

Meanwhile the United Nations Foundation – whose sister body, the Better World Fund, has generously sponsored this issue of *Our Planet* – has become the first funding organization to designate the elite World Heritage sites as the explicit focus of its biodiversity work. The increased resources and vigour that it has brought to safeguarding them offers hope that there will be more success stories like the Iguazu National Park ■

YOUR VIEWS

We would really like to receive your feedback on the issues raised in this edition of Our Planet. Please either e-mail feedback@ourplanet.com or write to:
Feedback, Our Planet
27 Devonshire Road
Cambridge CB1 2BH
United Kingdom

Biological BACKBONE

MWAI KIBAKI describes the challenges of managing protected areas in Africa and outlines his Government's polices for making conservation an integral component of the national development process

Emily Shore/UNEP/Topham

Biological and other natural resources are the backbone of development and livelihoods for most African economies and people. They provide industrial inputs, firewood, construction materials, medicines and ecosystem functions. We require these materials and services for both subsistence and commerce. Coming generations, too, will need these resources for social, health and economic needs, among other things. We must therefore use biological resources judiciously, ensuring that their availability and potential are always maintained – and where possible enhanced – to safeguard the needs of the future people of the continent.

In Kenya we have recognized the value of environmental resources. We recognize that the degradation of natural resources will adversely affect productivity and increase levels of poverty. In the Environmental Management and Coordination Act, Parliament has ensured that: 'Every person in Kenya is entitled to a clean and healthy environment and has the duty to safeguard and enhance the environment.' The conservation and sustainable use of biological resources is a key factor in Kenya's objectives of industrialization, improved economic performance and enhanced social welfare.

Land is a primary resource base for all development activities in Kenya. However, current land-use practices often disregard its potential and carrying capacity and the limitations of biological resources. Consequently, incidences of land degradation have reached alarming proportions, impacting negatively on both the environment and socio-economic development.

Sustainable use

Human activities – including agriculture, tourism, ranching, infrastructure developments and human settlements – often disregard the sustainable use of natural resources, harming the environment.

The rapid growth of the human population in Kenya and the consequent demand for basic needs – especially for food, shelter, clothing, health and related services – has exerted tremendous pressure on natural resources, particularly land. This has led to encroachment of marginal areas, aggravation of land degradation and loss of biodiversity.

The present exploitation rate of many of the biological resources on which Kenya's development largely depends is unsustainable. Natural ecosystems that store water, protect the soil, or are habitats to unique plants and animals, have been degraded or converted to other uses.

The consequences of these activities and changes include:

- decimation of some of our animal and plant species to the point of extinction or near extinction;
- poaching of some animal and plant species of great economic potential;
- conversion of unique ecosystems for agricultural uses or as human settlements.

African countries face complex environmental and development challenges. Human population growth and poverty are putting severe pressure on biological diversity and natural resources. The natural landscape is fast changing from being rich and productive to barren and unproductive. Millions of tonnes of fertile topsoil are being lost daily through water and wind erosion. The natural resource base that is essential for development is continually being weakened and undermined by unsustainable land-use practices.

The current number and distribution of protected areas cannot guarantee effective and sustainable conservation of natural resources. We must therefore urgently establish additional ones so as to ensure the long-term conservation of biological diversity. It is particularly necessary to conserve representative ecosystems that are rich in biodiversity. Special attention should be given to endemic, rare and threatened species or those species and habitats with critical scientific and aesthetic values.

Management of protected areas in Kenya, as well as in other African countries, has been severely curtailed by many threats and cha 'enges, including:

- overexploitation of resources, including biodiversity;
- encroachment of natural habitats by our increased human population;
- closure of wildlife migratory corridors and dispersal areas;
- civil unrest and warfare within and across national boundaries;
- refugees and displaced peoples;
- poor relationships with neighbouring communities;
- lack of effective systems that promote devolution of ownership and management of natural resources to local communities;
- ina equate technical capacity and fu ds for capital development and operations;
- inadequate policy, legislative and institutional frameworks;

Bert Wikkeel/UNEP Topham

- impacts of recurring droughts, desertification and land degradation on the environment; and
- inequitable sharing of benefits accruing from natural resources.

The impact of these constraints and limitations are manifested in the poor state of the environment. The inability to respond effectively to these challenges requires us to undertake fundamental reforms with a view to improving our approach to managing protected areas.

Policies and legislation

Establishing, maintaining and expanding conservation areas is a fundamental approach to protecting the environment and conserving biological diversity. This could be undertaken within the framework of environmental and natural resources policies, legislation and programmes. Protected areas comprise the remaining samples of Earth's natural systems – but it is becoming increasingly difficult to maintain their ecological integrity and productivity, particularly in developing countries. Regrettably, many countries have not established an adequate or representative coverage of protected areas within their territories.

Our reform programmes need to consider encouraging the establishment of areas managed by local communities primarily for the conservation and sustainable use of natural resources. Community-based initiatives should complement the efforts of governments and national institutions in conserving biodiversity and environmental protection.

Such community-based conservation – which should cover important migratory corridors and dispersal areas – is critical for maintaining the ecological integrity of protected areas. We need to explore economic incentives for communities that protect and conserve our vital environmental resources – and, equally, consider disincentives for land-use practices whose impact undermines the purpose for which the conservation area was created. Integrated management plans, including community initiatives, should establish and maintain buffer zones around the borders of protected areas.

Coordinated approach

We in Kenya are considering providing economic incentives and disincentives with a view to preventing or abating harm to the environment. These will work well, where necessary, if they are implemented in a coordinated approach with the active support and collaboration of the international community. These economic instruments will need to be used together with support measures that ensure that raw materials, non-renewable resources and energy are conserved and used as efficiently as possible. It is preferable that materials are re- ▶

We must urgently establish additional protected areas so as to ensure the long-term conservation of biodiversity

used and recycled to the maximum extent possible, while non-degradable materials are disposed of safely and effectively.

Sustainable development practices should ensure that the conservation and management of natural resources are treated as an integral part of national and/or local development plans. Likewise, the formulation of all such plans should take full consideration of ecological, economic, cultural and social factors.

Development activities and projects should be guided by sound environmental policies to reduce adverse effects on natural resources, and on the environment in general. All policies, plans, programmes and activities likely to adversely affect natural resources, ecosystems and the environment should be subject to impact assessment and regular environmental monitoring and audit. The dissemination of environmental information and the participation of the public in key decision-making processes are critically important, as is respect for the traditional rights and intellectual property rights of local communities.

Access to indigenous knowledge and its use should be subject to the prior informed consent of the concerned communities and to specific regulations recognizing their rights to it, and its appropriate economic value. Income generation and benefit-sharing initiatives should be given priority.

Research and integration

Protected area management authorities should have capabilities to carry out scientific and technological research in the conservation, sustainable utilization and management of natural resources, paying particular attention to ecological and socio-economic factors, and to their integration. The results of the research should be applied in developing and implementing environmental conservation policies. Research programmes need to be coordinated with a view to achieving maximum synergy and complementarity, the exchange of research results and the development of joint research programmes and activities locally, nationally and internationally. Regional and international cooperation is especially important on conservation of transboundary ecosystems and migratory species.

My Government has a clear national agenda with regard to environmental protection and conservation. Priority environmental programmes of the Government of Kenya include:

- planting at least 80 million seedlings every year in an aggressive afforestation and reforestation programme intended to increase national forest cover from 1.7 to 10 per cent;
- the Environmental Management and Coordination Act, which we are now implementing, and which requires all policies, programmes, plans and projects to be subjected to environmental impact assessment regulations;
- reviewing the national policy and legal framework to enhance the conservation of national parks and community-based conservation areas, while reducing human/wildlife conflicts and increasing benefit sharing;
- reviewing watershed management policy and legal framework with a view to enhancing management measures.

I consider environmental conservation to be an integral component of the national development process. Sustainable development is our goal in Kenya. This should, in the long term, ameliorate the negative impacts of poverty, provide for basic needs, and meet the aspirations of our people for a better life. Equitable sharing of benefits accruing from our natural resources is a critical factor in that process.

Finding solutions

I believe that the challenges I have raised in this short article will be discussed and elaborated on during the World Parks Congress and suitable solutions found. Africa needs technical and financial support to enhance its capacity to promote environmental protection and sustainable development. We all have a duty to protect our environment and conserve biological diversity for posterity ■

HE Hon Mwai Kibaki MP, EGH, is President and Commander-in-Chief of the Armed Forces of the Republic of Kenya.

MOUNT KENYA

The Mt Kenya World Heritage site is centred around Africa's second highest mountain, which bears snow and ice right on the equator. Seven million people depend on its catchment for water. The mountain is home to rare endemic plant species, while the forests which surround it shelter endangered species of animals. It is one of the continent's most dramatic landscapes.

Mt Kenya's forests are threatened by a host of human activities – settlement and encroachment, illegal logging, firewood collection, poaching, charcoal burning, and destructive honey collecting.

Aerial photographs taken by UNEP show that forest ecosystems have partially recovered: a successful programme by the United Nations Development Programme and the Global Environment Facility, supported by the UN Foundation, has contributed considerably to this. Community Management of Protected Areas Conservation (COMPACT) is showing that community-based activities can significantly increase the effectiveness of biodiversity conservation at World Heritage sites.

One of COMPACT's projects provides loans and training to small farmers around Mt Kenya to operate beehives, and has linked them with a fair-trade, socially and environmentally conscious company – Honey Care Africa Ltd – which buys their produce at a mutually agreed, guaranteed price. The project – which has won many awards – has increased the farmers' income, while reducing forest fires caused by poor beekeeping practices. ***GL***

BENEFITS *beyond boundaries*

NELSON R. MANDELA and **HER MAJESTY QUEEN NOOR** say that protected areas, including World Heritage sites, are essential for safeguarding the future

It was with great enthusiasm that two years ago we pledged our utmost support to the Vth IUCN World Parks Congress. In doing so, we aspire to bring this vitally important gathering to the widest audience ever. We hope to encourage political leaders, business and all other constituencies to recognize protected areas as assets to be cared for and shared for the benefit of our and future generations locally, nationally and internationally.

Gerald Hinde/UNEP/Topham

World Heritage sites and other protected areas are an outstanding gift passed from one generation to another. On land and at sea they are home to millions of species that form a web of life intricately linked to human survival. They safeguard our historical treasures and cultural heritage. They generate sustainable income for local communities worldwide.

Protected areas regulate and buffer the Earth's natural processes to balance our climate. Protecting these natural systems also improves the quality of our air, soil, water and life. Protected areas are genetic storehouses that promise a healthier future for the planet and its peoples. Safeguarding these precious areas means safeguarding our future. Without an effective global network of protected areas these benefits to society will be lost, the chances of alleviating poverty reduced and the inheritance to future generations diminished.

And yet local communities' and indigenous peoples' rights have, at times, been compromised and their voices not heard; habitats are disappearing or becoming degraded in deserts and wetlands alike; species are being lost at an intolerable rate. Too many key stakeholders view protected areas as a constraint to their activities, with valuation systems failing to recognize the benefits that protected areas provide to society. A truly representative system of protected areas has not been achieved; too many parks exist only on paper, many lacking appropriate financial structures and adequately trained staff.

Ring of promise

Against this backdrop, the central theme of the World Parks Congress in Durban – 'Benefits Beyond Boundaries' – rings with promise. It offers a forward-looking agenda that will enable us to reconnect with our best, yet often ignored allies – the wider communities of interest – to achieve new outcomes and ambitious targets. By Africa hosting the Congress, it will also reinforce our focus on addressing people's needs and reducing hardship so that sustainable development becomes the true underpinning of conservation.

The challenges are real, yet the Congress agenda is visionary. The Congress must do more than state which trends should be reversed: it must be a catalyst for enhanced global action for the benefit of people and protected areas.

When nations find it difficult to remain on speaking terms, protected areas can step in to enhance cooperation across borders

Many of Africa's most beautiful protected areas have their origins in the colonial past, and by tradition have been 'set aside' by the privileged and for the privileged. We need to continue to break from this legacy.

In many parts of the world, the job of park rangers is becoming more and more dangerous, with protected areas often being the targets/victims/subjects of crime and violent conflict. It is also time to 'protect the protectors', those who work on the front line of conservation and sometimes make the ultimate sacrifice for protected areas.

As worldwide efforts are deployed to combat cancer and HIV/AIDS, we forget that protected areas may be the unique 'gene banks' that hold the key to curing the world's most devastating diseases. It is time to allocate more resources to conserving this biodiversity and to recognizing traditional knowledge.

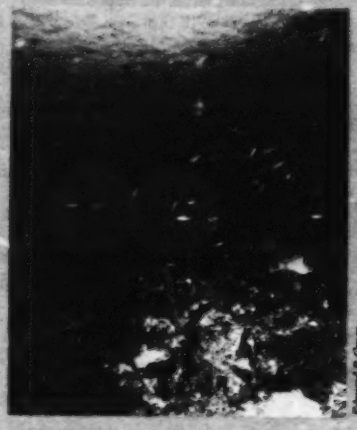
When nations find it difficult to remain on speaking terms, protected areas can step in to enhance cooperation across borders, and contribute both to security and conservation. We must increase our efforts to promote the 'Peace Park' concept, and demonstrate political leadership in this field.

In welcoming the Durban Congress, we are sharing our passion for change and optimism for the future of humanity and the planet. In celebrating the achievements of the past, we should also acknowledge what we have learnt to ensure that the future of protected areas becomes a force for unity and common purpose in the development of our communities – local and global alike ■

Nelson R. Mandela and HM Queen Noor are patrons of the Vth IUCN World Parks Congress.

Common *inheritance*

TIMOTHY E. WIRTH introduces the United Nations Foundation's work to conserve some of the world's most important areas for biodiversity



Over the last five years the United Nations Foundation has made conserving biodiversity an organizational priority. We have chosen to focus on UNESCO's World Heritage Biodiversity sites, because these areas hold biological significance for the entire global community, and are a common inheritance of humankind.

Timely, targeted

We have worked to strengthen the efforts of UNESCO's World Heritage Centre by providing timely and targeted grants totalling $32 million to the most threatened World Heritage Biodiversity sites, and by promoting key partnerships between the agency and other technical and funding organizations such as Conservation International, the Worldwide Fund For Nature (WWF), the Wildlife Conservation Society, the Charles Darwin Foundation, AVEDA Corporation and the Walt Disney Conservation Fund. UN Foundation support is now benefiting more than 50 designated or potential Natural World Heritage sites throughout the world – from the Galapagos Islands off the coast of Ecuador to the Cardamom Mountains in Cambodia.

UNESCO's World Heritage Biodiversity sites are a common inheritance of humankind

We hope that our example inspires others. WWF and Conservation International have committed to integrate World Heritage as a core priority of their work, and have established a partnership with the UN Foundation which will allow millions to be spent in and around these sites over the next decade. The Global Environment Facility has provided more than $45 million in parallel funding to UN Foundation initiatives. We are working in World Heritage sites with local NGOs as well as the United Nations Development Programme, the Food and Agriculture Organization and UNESCO – and, of course, UNEP is a most important partner, not least in our vital joint work to conserve coral reefs.

This summer, the UN Foundation Board of Directors expanded our commitment to World Heritage to include a Rapid Response Facility. With support from the UN Foundation, the World Heritage Centre, Fauna and Flora International and IUCN–The World Conservation Union, the Rapid Response Facility will deliver timely financial assistance to sites facing emergency needs or threats, such as civil instability, refugee movements, oil spills, natural calamities or illegal resource exploitation.

Depending on the scale of the problem and time-frame of the response needed, grants of up to $100,000 will provide technical assistance to local site managers or NGOs to assess emerging threats and promptly address conservation challenges facing World Heritage Biodiversity sites in developing countries. These grants will also help build the capacity of site managers to implement projects and mobilize needed financial support and political will for the protection of endangered sites.

Rights, democracy, education

We also believe that it is essential that the US Congress supports President Bush's commitment to rejoin UNESCO by 1 October 2003. The President believes that UNESCO is important to promoting and protecting human rights, democracy and education around the world, and that makes America – and all countries – more secure. With dramatic reforms in place the agency is more important than ever. With full United States involvement it can become an even more powerful force in the fight for freedom and democracy – not to speak of improving its work to safeguard some of the world's most biologically important protected areas, World Heritage Biodiversity sites ■

Timothy E. Wirth is President of the United Nations Foundation.

Beauty or beast?

YOLANDA KAKABADSE says that trade and biodiversity conservation are fundamentally linked, and calls for both to be vehicles for sustainable development

Two countries that hold a great share of the world's biodiversity each host key conferences this autumn. For us some 3,000 delegates gather in Durban, Republic of South Africa, for the global forum on protected areas (World Parks Congress), an estimated 8,000 people are being drawn to the Mexican city of Cancún for the 5th Ministerial Conference of the World Trade Organization (WTO).

The linkages between trade and the environment have long been established, with trade and economic development relentlessly driving environmental change. Trade, in itself – to summarize the academic debate – is neither the beauty nor the beast for the environment. That depends on whether it takes place within a law and policy context that includes and supports environmental conservation and sustains people's livelihoods.

Economic prospects

In Mexico, trade ministers will look at expanding the economic prospects that are so fundamental to the survival of nations. In South Africa, we will address critical foundations of sustainable development: biodiversity and instruments for biodiversity conservation. One meeting will focus on trade, the other on protected areas, yet the debates will inevitably converge.

Travel and tourism now account for 11 per cent of global GDP and 55 per cent of tourists worldwide visit protected areas. The Galapagos Islands World Heritage site, in my country, Ecuador, is a hallmark of ecotourism. Cancún, by contrast, illustrates 'industrial tourism': there is a growing concern among the people of the area that the 'gains' from tourism are being retained by foreign corporations rather than used locally to raise standards of living in the community.

Tourism is also a top export industry in Africa. In southern Africa alone, biodiversity and protected-area-based enterprises are creating sustainable sources of income for their communities, making a strong business case for sustainable development. Exports of 'Rooibos', the famous herbal tea, total 6,000 tonnes, earning $7.45 million per year. Meanwhile 700 tonnes of *Aloe ferox* raw extract is exported annually for cosmetic and medicinal products, bringing employment to entire communities in the Eastern Cape.

Our Ecuadorian rainforests hold a cornucopia of goods and services, and more are discovered every day. Recent economic calculations show that in the long term those provided by protected areas can be worth more than oil exploitation. The international trading system should be structured so as to allow them to be traded fairly and sustainably. In China, 40 per cent of all medicines consumed depend on traditional herbal components. Many of the plants used are rapidly disappearing through logging and the transformation of natural areas into agricultural fields. The country's protected areas are expected to prove their last refuge. Worldwide, a quarter of patented medicinal products now come from Southern plants and from the knowledge and practices of traditional healers. So intellectual property rights must support indigenous peoples and local communities, sustaining their rights and livelihoods. Cancún presents an opportunity to address this important issue. Meanwhile the WTO should review the process for addressing its relationship with multilateral environmental agreements, to make the negotiations a more meaningful dialogue between relevant actors and stakeholders.

Multi-stakeholder dialogue

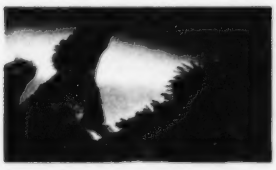
A session of the Global Biodiversity Forum (GBF) in Cancún prior to the Ministerial Conference will bring together the trade and biodiversity communities. The GBF has been regularly convened over the past ten years by IUCN–The World Conservation Union, UNEP, the World Resources Institute and the Secretariat of the Convention on Biological Diversity to provide a transparent and neutral platform for multi-stakeholder dialogues on key biodiversity-related issues.

Equity and sustainability are at the heart of the Convention on Biological Diversity, while the Agreement Establishing the WTO includes a commitment to environmental protection and sustainable development. There is no sustainable trade without the natural resource base. The two are fundamentally linked, even if this is not always recognized. Our challenge is to show that Cancún and Durban are talking not about two different planets, but about the same Earth, where both trade and biodiversity conservation are – or can be made into – vehicles for sustainable development ■

Yolanda Kakabadse is President of IUCN–The World Conservation Union.

GALAPAGOS

The greatest threat to the unique biodiversity of the evolution showcase of the Galapagos Islands World Heritage site is invasive species – such as fire ants, goats, cats, pigs and rats – which decimate indigenous wildlife. The first World Heritage project approved by the UN Foundation Board, carried out in partnership with UNESCO, has now successfully tested procedures for eradicating many of them – and has been particularly effective at virtually eliminating ants on Marchena Island. The initiative has catalysed an $18 million grant from the Global Environment Facility to spread the work across the islands. *GL*



T. Mertens/UNEP/Topham

Hoang Thuan/UNEP/Topham

Wonders of the *world*

SEEMA PAUL describes bids to conserve, and bring sustainable development to, natural World Heritage sites

If biodiversity is the measure of life on Earth, natural World Heritage sites provide perhaps the best places to take the pulse of the planet. For they are recognized to contain the most important habitats for biodiversity conservation in the world.

The sites are designated under the UNESCO World Heritage Convention as places of 'outstanding universal value ... for whose protection it is the duty of the international community to cooperate'. Yet they face many of the same problems that are threatening biodiversity around the globe, including loss of habitat, invasive species, overexploitation and pollution. Their status has often not translated into national or international assistance for their conservation. Many suffer from a lack of resources, as does the United Nations, thus limiting the technical capacity to implement biodiversity initiatives.

Human concerns

The United Nations Foundation focuses its biodiversity work on these sites both to sustain some of the Earth's most important biological jewels and to promote sustainable development. While working to conserve wonders of the natural world, it uses projects in these sites to promote replicable conservation approaches that respond to human concerns. In the process it hopes to build greater public urgency about the need to protect biodiversity, and to leverage increased funding for initiatives in the field.

World Heritage sites are recognized to contain the most important habitats for biodiversity conservation

The UN Foundation was the first funder to focus on World Heritage Biodiversity sites, and has tripled the resources going to them through UNESCO alone. It has also catalysed tens of millions of dollars in parallel funds from the Global Environment Facility (GEF), and is also working with UNEP, the United Nations Development Programme (UNDP), the Food and Agriculture Organization (FAO) and many others.

Partnerships established by the UN Foundation with the Worldwide Fund for Nature (WWF) and Conservation International will allow the World Heritage Centre to tap into their existing networks, bringing it on-the-ground conservation capacity for the first time. Thus the UN Foundation is strengthening overall United Nations capacity for conservation through public-private partnerships.

The sites and national parks that have already received assistance range from Argentina to China, from a subterranean river in the Philippines to the Himalayas, from Komodo Islands in Indonesia (home to the famous 'dragons') to Uganda's Impenetrable Forest.

In the Sundarbans mangrove forest of India and Bangladesh – home to the world's largest population of tigers and 260 bird species – the UN Foundation and UNDP have brought the two countries together to develop a joint conservation plan. In nearby Nepal the GEF and UNDP are using a UN Foundation grant to conserve the only existing corridor forest linking the Royal Chitwan National Park, a World Heritage site, to the upland Himalayan forest ranges. Meanwhile in Brazil, partnerships with the Government, UNESCO and national and international non-governmental organizations will enable 70 per cent of the country's biodiversity habitat to be conserved and will identify and designate new World Heritage sites.

Tourism and conservation

UNEP, the World Heritage Centre, the RARE Centre for Tropical Conservation and AVEDA, the environmentally conscious cosmetics company, are collaborating on a four-year, $2.5 million UN Foundation project to link sustainable tourism and biodiversity conservation in six World Heritage sites. And FAO is developing community-based forest enterprises to promote sustainable natural resource management at two more.

Other success stories are reported elsewhere in these pages. The work to conserve five threatened World Heritage sites in the Democratic Republic of the Congo (see page 27) is particularly important as it could provide a model for conserving biodiversity in conflicts: the Biodiversity Support Programme's prestigious publication, *The Trampled Grass: Mitigating the Impacts of Armed Conflict on the Environment*, has already described it as such. The Society for Conservation Biology gave its 2002 Distinguished Achievement award to the Charles Darwin Foundation for, among other things, its UN Foundation-supported work on invasive species in the Galapagos (see page 9), and the beekeepers project at Mt Kenya (see page 6) has won many awards including a first prize in the Poverty Challenge Expo in 2000 and 2001.

If projects like these can be increasingly replicated, the pulse of the planet will beat a little more steadily ■

Seema Paul is Senior Program Officer for Biodiversity at the United Nations Foundation.

PROTECTING *heritage*

FRANCESCO BANDARIN outlines the threats to World Heritage sites rich in biodiversity and describes what is being done to conserve them

About a year ago, I travelled to five national parks inscribed on the World Heritage List and awarded medals of honour to the park guards for 'simply' going to work every day. This would seem an unexceptional act, were it not that the guards were not being paid, and that they work in the Democratic Republic of the Congo (DRC) – a country that has faced two major civil wars since 1996, and is still struggling to establish a stable peace process.

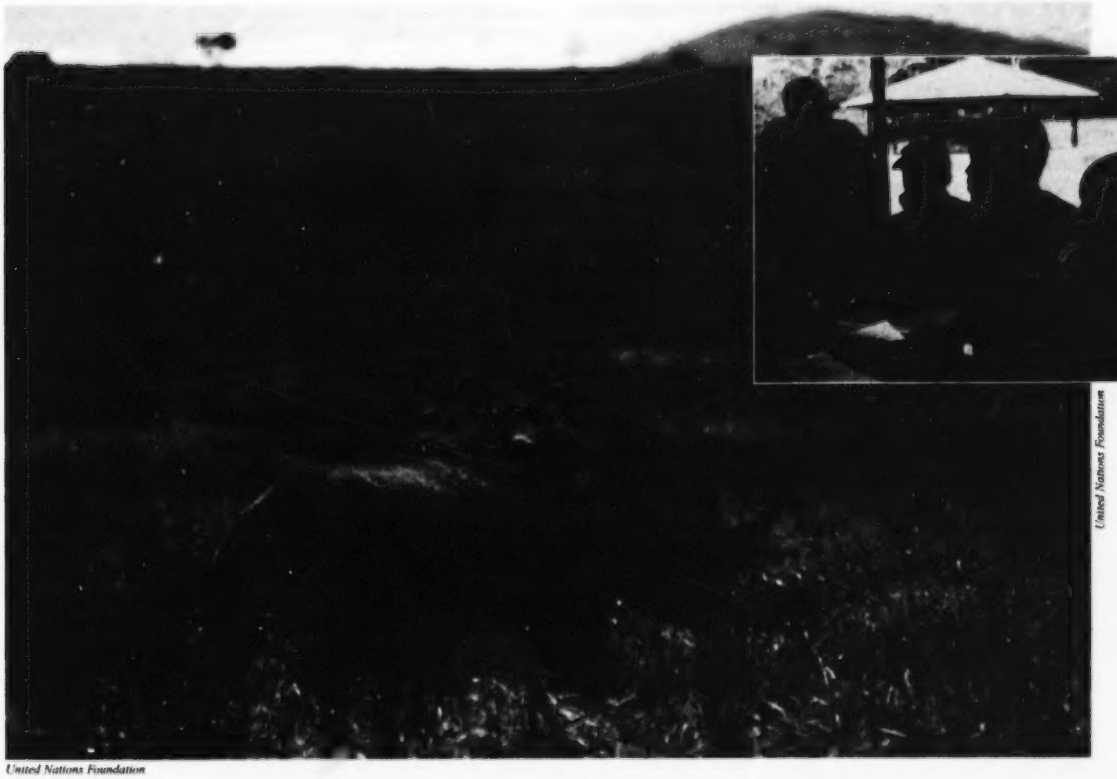
Line of duty

Despite the dangers, the guards risked their lives to protect Virunga, Garamba, Kahuzi and Salonga National Parks as well as Okapi Wildlife Reserve; over 50 lost their lives in the line of duty. All five sites are inscribed on the List of World Heritage in Danger because of threats to their biodiversity. A massive influx of war refugees to the parks has resulted in uncontrolled deforestation and poaching. Throughout the conflict, their staff continued to go to work, thanks to their commitment to safeguarding the sites for future generations.

The awards ceremony was part of a ten-day mission with a team from the Project on Biodiversity Conservation in Regions of Armed Conflict: Protecting World Natural Heritage in the Democratic Republic of the Congo. This $4.2 million project was launched by the United Nations Foundation in 2000 and is being spearheaded by the UN Foundation, UNESCO, the DRC authorities, and the United Nations Fund for International Partnerships.

The UN Foundation has been working to promote the World Heritage Convention since 1999. As part of implementing its programme framework on biodiversity, the UN Foundation focuses uniquely on conserving World Heritage sites inscribed for their natural values, specifically those located in areas of important biological diversity. In November 2002, on the 30th anniversary of the World Heritage Convention, the UN Foundation and Conservation International announced a $15 million, three-year partnership for World Heritage Conservation, including mobilizing resources towards setting up sustainable financing mechanisms, such as trust funds, for selected sites.

For the past 30 years, UNESCO's Convention Concerning the Protection of the World Cultural and Natural Heritage has been a unique tool for bringing protection to ecosystems with rich ▸



United Nations Foundation

United Nations Foundation

biodiversity. In signing the Convention, countries make a commitment to protect all their natural and cultural heritage sites – regardless of whether they are inscribed on the World Heritage List. Signatories are encouraged to reinforce their national laws for environmental protection and to formulate management plans to preserve and protect the biodiversity of their natural areas and promote sustainable development.

Key to survival

Sustainability remains the key to both the survival of World Heritage and its credibility. Conservation is by definition long term – not for a year or two, but for ever. So the 176 signatory countries that have signed the Convention have embarked on an ongoing mission. They promise to adopt national policies aiming to give their countries' natural heritage a function in the life of the community and to integrate protecting it into comprehensive planning programmes. They agree to establish heritage management units within their governments. They establish laws to protect their natural heritage, and undertake both preventative and reactive measures to counteract the dangers threatening protected areas. They commit themselves to developing national or regional centres for training in protecting, conserving and presenting their cultural and natural heritage, and to encourage scientific research in this field. And they support each other through international cooperation and assistance.

Inscribing a site on the World Heritage List is just the first step towards ensuring its conservation. It is then actively surveyed by the entire World Heritage community, from the Parties, governments and site managers to the World Heritage Committee and its advisory bodies: IUCN–The World Conservation Union for natural sites, the International Council on Monuments and Sites (ICOMOS) for cultural sites, or both for mixed ones.

There is then a twofold responsibility for caring for the site. The people living near it have an obligation to protect it for both their local, and the international, community. In turn, the international community has a responsibility to support local people and governments in safeguarding it. Poor countries, which often have the richest biodiversity areas, almost always require international cooperation and assistance with designating, registering and preserving them. The Centre helps build international cooperation between developed and less developed countries in conserving World Heritage sites.

Marine nominations

Recently we have been taking a closer look at oceans and coasts, which have so far not received the attention they deserve. Less than 0.5 per cent of shores and marine areas worldwide receive any form of protected status, and only nine natural sites are included in the World Heritage List for their marine features. We are organizing workshops and pilot projects for new marine nominations.

Looting, war, deliberate destruction, industrial pollution, uncontrolled urbanization, mining, land speculation, unchecked tourist development and natural disasters continue to pose major problems for World Heritage sites. Thirty-five sites (18 cultural and 17 natural) are currently inscribed on UNESCO's List of World Heritage in Danger, including national parks such as the Everglades (United States of America), Rwenzori Mountains (Uganda), and Ichkeul (Tunisia). The danger listing aims to draw world attention to the need to reinforce protection. Once listed, sites generally benefit from more effective national measures and increased international funding.

Bravery and commitment to ideals and principles can help safeguard our world heritage for future generations

WORLD HERITAGE

754 sites are currently inscribed on the World Heritage List: 582 are inscribed for their cultural values; 149 fall under the natural criteria; and 23 are inscribed for both their natural and cultural features. Roughly half of the natural sites were included for their outstanding biodiversity value. The World Heritage Convention defines such sites as containing 'the most important and significant natural habitats for *in-situ* conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation'.

Successful campaigns

Through the cooperation and commitment of its signatories, the Convention has been the legal instrument behind several successful international safeguarding campaigns. In the 1990s, the delicate biological balance of Ecuador's Galapagos Islands was threatened by excessive fishing and the introduction of alien plant and animal species. The World Heritage Committee seriously considered adding the islands to the List of World Heritage in Danger, but the Government took immediate action and in 1998 enacted a Special Galapagos Law to improve conservation in the islands and surrounding waters.

In 1999, the World Heritage community campaigned against a plan for enlarging an existing salt factory to commercial scale in the last pristine birthing lagoon for the Pacific grey whale, Laguna San Ignacio in El Vizcaíno Bay on Mexico's Baja California peninsula, which is also home to many other endangered species. The World Heritage Committee forewarned the Mexican Government of the threats, and it in turn refused permission for the saltworks.

Over the last 40 years, the World Parks Congress has also aimed to draw the world's attention to the importance of protecting natural environments. Unfortunately, it often takes catastrophes to achieve this. The decline of the Earth's resources has indeed become such a catastrophe.

We must raise a red flag for the protection of biodiversity. We must get more people who believe in the cause on board. We need more allies with the passion and savvy to protect our Earth's fragile ecosystems. More than anything, we need more people to follow in the footsteps of the Congolese park guards, who have shown how bravery and commitment to ideals and principles can help safeguard our world heritage for future generations ■

Francesco Bandarin is Director of the UNESCO World Heritage Centre.

PEOPLE

Dr Annelisa Kilbourn, who died in a plane crash in Gabon last November while researching the link between the ebola virus and western lowland gorillas, has been posthumously elected to UNEP's Global 500 Roll of Honour. The British scientist was one of eight individuals and organizations to be so honoured in 2003: the awards, given for outstanding contributions to the protection of the environment, were presented by Lebanon's Minister of Environment, HE Mr Fares Boueiz, and Klaus Toepfer, UNEP's Executive Director, at the World Environment Day ceremonies in Beirut on 5 June.

Dr Kilbourn's work produced the first proof that gorillas are infected by the virus, and quickly die from it – information which may serve to protect the apes and humans alike. It followed a distinguished career in which she had both conducted the first research on the health of free-ranging orang-utangs in Sabah, Malaysia, and helped to protect the last remaining rhinos in Borneo. Her mother and sister *received the award on her behalf.*

Ms Rizwana Hasan collected the award on behalf of the Bangladesh Environmental Lawyers Association (BELA), a pioneer in public interest environmental litigation in a country where 60 per cent of the people are estimated to have no access to justice. BELA has so far filed 38 environmental cases, and won 12: the rest are pending.

Meanwhile Ms Fatima Belbachir was presented with this year's only award in the Roll of Honour's youth category, given to the young students of the Salle Pédagogique des Zones Arides in Beni Abbes in the southwest of the Algerian Sahara. The children set up an experimental lagoon system, combating pollution and increasing agricultural production.

The other new Global 500 laureates are Najib Saab of Lebanon, who launched the successful *Al-Bia Wal-Tanmia* (Environment and Development) magazine which helped to raise environmental awareness throughout the Arab region; Dr Bindeshwar Pathak of India, who developed an environmentally friendly lavatory, of which a million have now been built; Boureima Wankoye who introduced mass planting of gum arabic in Niger, generating income and helping to rehabilitate degraded land; the pioneering French environmentalist Serge Antoine; and the Women's Environment Preservation Committee of Nepal, which collects and manages garbage in the town of Lalitpur.

Klaus Toepfer said that the winners were 'members of a broad environmental movement that is flourishing around the world' ■

GEF

Leonard Good was appointed to a three-year term as Chief Executive Officer and Chairman of the Global Environment Facility – the largest single source of funding for the global environment – by its Council in May 2003. Mr Good, a former President of the Canadian International Development Agency and twice the country's Deputy Minister of the Environment, succeeds **Mohamed El-Ashry**, who has led the GEF since its establishment in 1991.

Mr Good said: 'Coming generations will judge our stewardship of the environment not by the volumes said and written about it, but by what specific measures we have taken to sustain a healthy world' ■

IUCN

*Quadruple amputee **Jamie Andrew**, a Scottish mountaineer who lost both hands and feet to frostbite in 1999, has collected an award from the International Institute for Peace through Tourism for scaling several peaks in the Swiss Alps to highlight the importance of protecting mountain environments. His climb – with a team jointly supported by IUCN-The World Conservation Union and the International Mountaineering and Climbing Federation – also celebrated the success of the Swiss Government in achieving World Heritage status for the Jungfrau-Aletsch-Bietschhorn region and promoted the creation of transboundary protected areas, particularly the Siachen Glacier between India and Pakistan* ■

Dafne

The environmental scientist, **Prof Jacqueline McGlade** – who holds both British and Canadian citizenship – has been appointed Executive Director of the European Environment Agency ■

PARKS *and* PARTICIPATION

UNEP/Topham

CHIEF EMEKA ANYAOKU and **CLAUDE MARTIN** say that protected areas will only be viable if local communities benefit from them and participate in building harmony for people and nature

Protected areas now cover more of the Earth's surface than the giant countries of India and China combined. Their numbers are still growing, as are those of the elite World Heritage sites designated for 'outstanding natural value'. But the challenge is not just to increase their area – it is also to ensure that they are viable. And that will only happen if those who live in and around them benefit from them and, particularly, if they help to reduce poverty.

The very foundation of WWF originated in the concerns and fight for a particular area – the Coto Doñana in Spain, which was to have been drained by the Franco regime but became a national park under one of the new organization's first projects. Protected areas have been at the heart of WWF's activities ever since. It has been deeply involved in the planning, establishment and running of many hundreds of them. Traditionally many have been forest areas. More recently they have been increasingly joined by freshwater ecosystems and parts of the marine environment, which remains particularly under-represented in the world's canon of protected areas and is exposed to rapidly increasing threats from coastal degradation and rampant overfishing.

Since 1961, when WWF began, the number of protected sites has increased more than tenfold while the total area protected has grown more than sevenfold. This area has continued to increase rapidly even over the past decade, alongside a steady growth in environmental anxiety and accumulating evidence of the risks of climate change. This shows that the efforts of the global conservation community to protect what we have not yet destroyed are something of a success story. It demonstrates a willingness and increasing understanding among many governments to think of what we will leave to future generations.

Vital understanding

The growth of the world's area under protection and the increasing designation of World Heritage sites has been most important, and will continue to be so. But the increased understanding of the relationship of protected areas to human society – and more particularly to local communities – has been equally vital. We have come to realize that the long-term viability of protected areas cannot be assured without the serious involvement of local people, whether they live inside or adjacent to them. Experience with participatory models has grown further and substantially since the last World Parks Congress in Caracas in 1993. Park authorities and conservationists have in the past often paid lip service to 'people participation': sometimes they still do. But we now know that the participation of communities has to start with the planning of the protected area, be maintained during the phase when the decisions are being made and the area is being established, and be carried through to managing and monitoring it, and to sharing the benefits that arise from it. This is a demanding process which not all governments are willing to pursue.

Genuine people participation involves a great deal of responsibility and commitment. The gap between the aspirations behind protected areas and the reality of their management is often embarrassingly wide – there is ample evidence that many are falling far short of the expectations placed upon them. Economic and social pressures, pollution, poor management – and sometimes a lack of political support – all continue to leave protected areas vulnerable to degradation, while the lack of sustainable financing is now a major concern and a threat to many of them.

True participation

The impressive growth of protected areas clearly indicates the increasing pressure on land – from agriculture, forestry, mining and other forms of exploitation – and the multiplying threats to ecosystems. They are generally set aside to ensure that unique or biologically rich areas do not fall victim to commercial use, such as timber exploitation, industrial or large-scale agricultural development. The livelihoods of local people may, it is true, be affected by their establishment, but this difficulty can be overcome by sensible and true participation. Indeed there are many examples worldwide of conservation measures that actually improve the livelihoods and economic position of local and indigenous peoples.

Unfortunately, the perception has been increasingly promoted that these areas are being set aside primarily to keep local people out or to deprive them of their traditional rights, just to create a playground for nature-lovers –

There are many examples worldwide of conservation measures that actually improve the livelihoods and economic position of local and indigenous peoples

UNEP/Topham

distorting their real justification. In some countries, local politicians and dealers have used or even promoted this anti-people image of protected areas in pursuance of their own vested interests – the very interests that the areas have to be protected against. How often we hear the word 'fence' used in this context, symbolizing the notion that these areas are to be protected from intrusion by local people. In fact, only a tiny fraction of protected areas is fenced and, even then, this is normally to keep wildlife in, rather than people out.

Multiple assets

Similarly, protected areas are commonly considered a kind of sacrifice, a financial burden on humanity rather than an asset. But they do far more even than fulfil a crucial role in preserving biodiversity. They also contribute greatly, for example, to maintaining freshwater resources and protecting against flooding: big cities rely on them for the integrity of their water supplies. Yet such practical services are rarely listed as assets in national accounts. By contrast, destruction is often measured as accrued value, for example through the sale of timber when a forest is cut.

So, while we can celebrate our relative success in establishing World Heritage sites and other protected areas, we cannot afford to be complacent about their survival, even though they will be even more important in the future. We face a collective challenge not just to increase their number and area, but to ensure their viability. Through objective communication, we must further understanding of the value that protected areas represent, and the services they render to society, not least in contributing to reducing poverty. This will only succeed if local people become true partners and beneficiaries of protected areas, rather than being perceived as victims ■

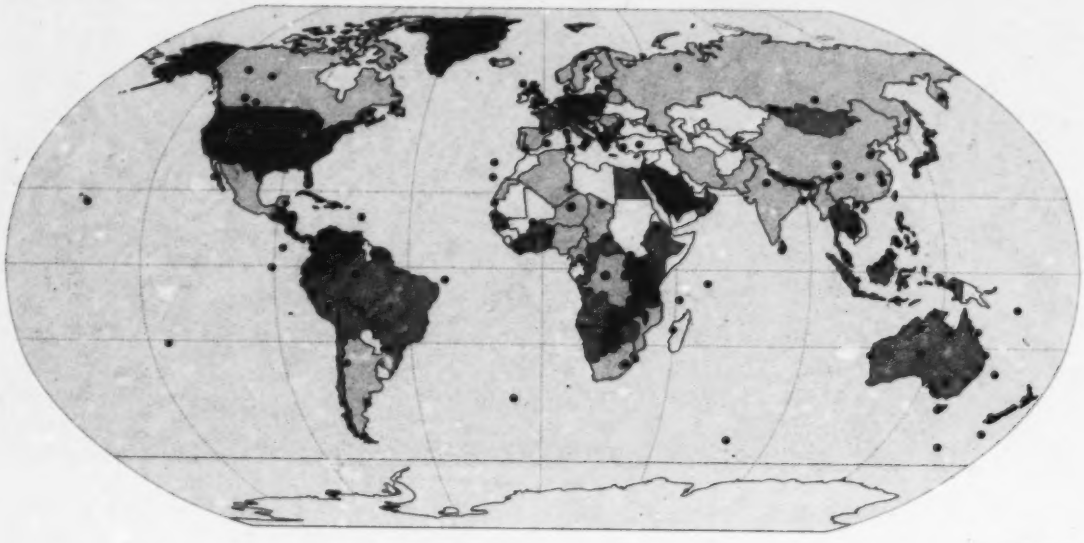
Chief Emeka Anyaoku is President and Dr Claude Martin is Director General of WWF International.

Protected areas

Humanity has set aside forests and other ecosystems for conservation for at least 2,500 years, with the first modern national park established at Yellowstone in 1872. Protected areas have since grown to cover much of the globe: the UNEP World Conservation Monitoring Centre now lists more than 102,000 terrestrial and marine sites covering nearly 19 million square kilometres – almost 4 per cent of the Earth. The vast majority are terrestrial, and their establishment is believed to be the biggest deliberate change of land use in history.

Meanwhile 149 sites of 'outstanding natural value' are given special legal protection under the UNESCO World Heritage Convention, ratified by 176 states. They and other protected areas serve a wide range of purposes, including safeguarding biodiversity and wild resources, providing clean air and water, combating climate change and attracting tourists. A rapidly growing number has been established across

Extent of the world's protected areas and location of World Heritage sites



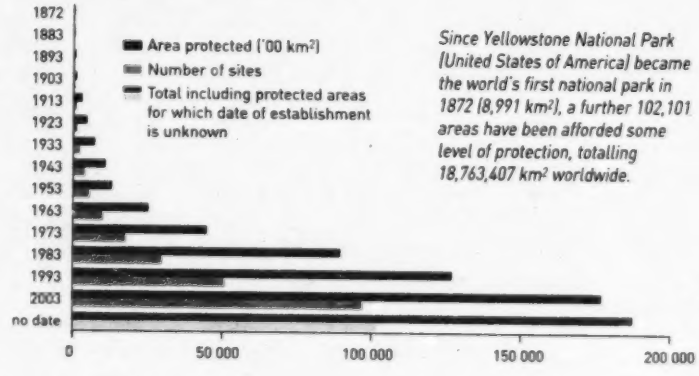
Source: UNEP-WCMC

Percentage of land protected, by country

- 0 - 5
- 6 - 10
- 11 - 20
- 21 - 40
- 41 - 70
- 71 - 100
- Natural and Natural/Cultural World Heritage sites
- Natural and Natural/Cultural World Heritage sites in Danger

The map shows the percentage of each country that is protected, and the location of World Heritage Natural and Mixed Cultural and Natural sites. Some 12.6 per cent of the world's land area is protected.

Growth of protected areas, 1872-2003



Since Yellowstone National Park (United States of America) became the world's first national park in 1872 (8,991 km²), a further 102,101 areas have been afforded some level of protection, totalling 18,763,407 km² worldwide.

Source: UNEP-WCMC

national boundaries, acting as catalysts for peace.

It is an immense achievement. But it still leaves much to be done. The protected areas are unevenly spread: one fifth of all the world's countries have designated less than 1 per cent of their land. There are major gaps; less than a tenth of a per cent of the original forest in the Southern Pacific islands is protected for example, along with less than 1 per cent of the forests of Central Africa's Cameroon Highlands and of the mangroves of the Gulf of Guinea. More striking still, less than 1 per cent of the seas and oceans that cover 70 per cent of the globe is covered by protected areas.

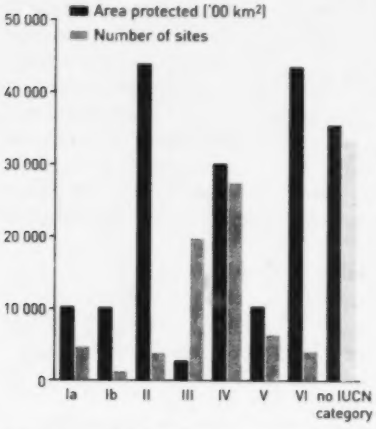
Many parks exist only on paper, lacking management and legal title. Many that are properly enforced are too small to function effectively. Many more are damaged by threats ranging from poaching to air pollution, from illegal mining and logging to uncontrolled fires – often because they have been set up without the participation of local people, who believe they do not benefit from them. And global warming threatens to erode and destroy their value, as species are unable to cope with the changing climate.

These threats are driven by the forces endangering the world's environment and security as a whole, such as poverty, overconsumption and overexploitation. The protected areas of the globe will only continue to do their invaluable work if these underlying problems are tackled – and if the local people have reason to value them and participate in their conservation.

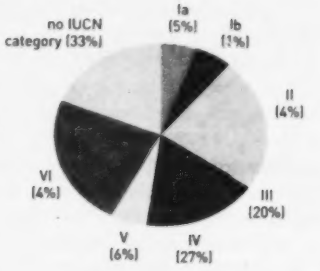
Geoffrey Lean

Protected areas by IUCN category, 2003

Area protected and number of sites



Proportion of total protected area
(% of all sites)



Source: UNEP-WCMC

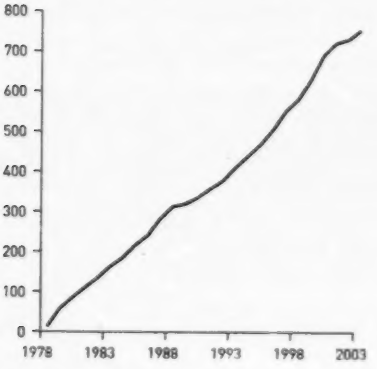
IUCN – The World Conservation Union defines protected areas as: land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means, *in seven categories:*

Ia: Strict nature reserve
Ib: Wilderness area
II: National park
III: Natural monument
IV: Habitat/Species management area
V: Protected landscape/seascape
VI: Managed resource protected area.

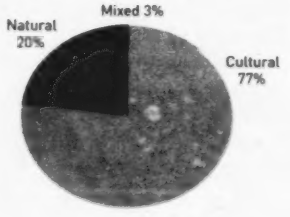
Some 33 per cent of all sites encompassing 19 per cent of the total area protected are uncategorized by IUCN.

World Heritage sites

Number of World Heritage sites, 1978-2003



World Heritage sites by type, 2003



Source: World Heritage Centre, http://whc.unesco.org/

The Convention on World Cultural and Natural Heritage, established in 1972, lists a total of 754 sites of which 582 are Cultural, 149 are Natural and 23 Mixed Cultural and Natural. The first listing, the Galapagos Islands, was made in 1978. Today, some 35, 17 of which are Natural or Mixed Cultural and Natural sites, are listed as World Heritage in Danger.

Harrison Ford receiving the 2002 Global Environmental Citizen Award; in *Indiana Jones and the Last Crusade* and *Indiana Jones and the Temple of Doom*; and in *The Empire Strikes Back*.

PROFILE:

Harrison Ford

internationally renowned actor and conservationist

Deep in the heart of Central America lives an ant with a famous name. The recently discovered *Pheidole harrisonfordi*, found in Honduras and Belize, is named after the star of the *Indiana Jones* and *Star Wars* films in honour of his work for conservation. For Harrison Ford's most important, if less well known, role is as a campaigner for the Earth's biodiversity.

The 61-year-old actor – who is a vice chair of Conservation International and has served on its board for over a decade – believes that 'conservation of biodiversity is the issue of our times'. The veteran of 35 feature films – a record ten of which have grossed over $100 million at the box office – has won almost as many awards for acting on this conviction as for his performances, but none is as unusual as the ant's name.

The name came about when Professor E.O. Wilson – the leading entomologist and Pulitzer Prize winning author who also serves on CI's board – gave the board the naming rights to several ant species that he and other scientists had found. And the board used the opportunity to honour some of its greatest supporters: Gordon Moore, the co-founder of Intel, and his wife now share their name with a species in Mexico.

Harrison Ford says that he became interested in the environment after buying a spectacular 325-hectare ranch in Jackson, Wyoming, and developing a 'sense of stewardship' about it. He has recalled how the 'majesty of nature' there helped to sensitize him to 'the great needs of the Earth' – and has given almost half of it, for conservation, to the Jackson Hole Land Trust.

In a public service advertising campaign for Conservation International on United States television last year he compared the world's most vital biological regions to the body's most critical organ. The human heart, he said, is 'just over 1 per cent of your body weight'. Similarly, he went on, 'our Earth has places, just over 1 per cent of its surface, which are critical to our survival. These hotspots are home to over 60 per cent of the world's species'.

He believes: 'Our health relies entirely on the vitality of our fellow species on Earth. When we protect the places where the processes of life can flourish, we strengthen not only the future of medicine, agriculture and industry, but also the essential condition for peace and prosperity.'

He calls the battle for conservation 'a war without an evil enemy' and believes that it can be won. 'What we do today will set the course and the example for generations to come.'

Besides his work with Conservation International, he also serves as the first 'airborne watchdog' for the environmental group Riverkeeper, which identifies and prosecutes polluters of the Hudson River, which runs near his home in New York State. He patrols the river watershed in his helicopter, and this year received a Lindbergh Award for it.

His other prizes include the Harvard Medical School's Global Environmental Citizen award, as well as the Golden Globe's Cecil B. deMille award for Lifetime Achievement, the International Center for Tropical Ecology's World Ecology Award alongside the People's Choice Award as Favorite All Time Movie Star. But perhaps the greatest recognition of all remains the name of a small Central American insect ■

GL

Scorecard, catalyst, watershed

KENTON MILLER and **ACHIM STEINER** raise the curtain on the Durban World Parks Congress

The Vth IUCN World Parks Congress, bringing together some 3,000 delegates from over 170 countries in Durban, will affect the next decade in the development of protected areas worldwide on land and sea alike. It is the only global forum for protected areas, the premier event for examining past successes and failures, and working to ensure their – and our – sustainable future.

The World Parks Congresses – reaching back over four decades since the initial one in Seattle in 1962 – have proved to be watershed international events and catalysed important changes for protected areas at global, regional, national and local levels.

The first two, both in the United States, brought attention to the global nature of protected areas and the parks movement: no longer were parks seen as just the preserves of national governments. The 1982 Bali Congress, the first to be held in the developing world, articulated the linkages between protected areas and human development issues. And the Caracas Congress (1992) – along with the Albany Symposium (1997) – resulted in new thinking about protected areas as part of the wider landscape, rather than as merely isolated islands of biodiversity. All Congresses have had a tremendous impact in helping national governments create new protected areas and direct more resources towards biodiversity conservation.

It is easy enough for governments and the private sector to say they are doing something for protected areas. The World Parks Congress forces a stock-taking. Its Report Card for Protected Areas, comprising a new United Nations List of Protected Areas and State of the World's Protected Areas report, provides an in-depth analysis of the global status of protected areas at the beginning of the 21st century.

The Congress can spur decision-makers to move beyond dialogue to action

Opportunity for commitment

The Congress programme seeks to balance vigorous debate with a technical focus that has a practical meaning for both the 'parks people' and the diverse stakeholders beyond the fences – and helps build capacity to improve biodiversity conservation around the world. It provides an opportunity for commitments to be made, partnerships formed, ideas fermented and dialogues begun. One special session focuses on relationships between protected areas and a wide range of other interests including tourism; mining, oil and gas; indigenous and traditional peoples; the fisheries sector; and water supply authorities. Another is dedicated to Africa's protected areas, reporting on a range of initiatives from the Congress and articulating vital recommendations for action.

The Congress can spur decision-makers to move beyond dialogue to action through a Durban Accord – providing a succinct joint vision statement for protected areas – and global recommendations for change. Meanwhile students at Yale University have coordinated input from young people worldwide on how best to manage protected areas in the future in the The Durban Youth Accord. Next year's Conference of the Parties to the Convention on Biological Diversity will be presented with a workplan developed by the Congress. Ultimately, we hope that the Congress will help advance the United Nations Millennium Development Goals, and help realize sustainable development scenarios that have protected areas as the essential building blocks of landscapes ■

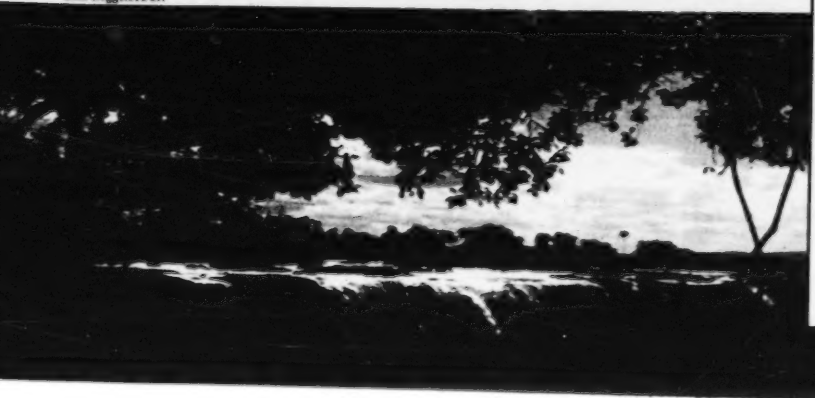
Kenton Miller is Chair of the IUCN World Commission on Protected Areas and Achim Steiner is IUCN Director General.

World Parks Congress

Central issues: the role of protected areas in relation to poverty and human needs; how protected areas anticipate and adapt to global change – biophysical, economic and social; the rationale for protected areas as an investment for a more sustainable future; and the contribution of protected areas to peace and security.

Cross-cutting themes throughout the programme: Marine, World Heritage, and Communities and Equity, highlighting increasing protection of our marine environment (less than 1 per cent at the moment); raising capacity in establishing and managing the world's icon sites; and examining community-managed protected areas and the need for more participatory and equitable approaches.

The programme includes four symposia where leading international speakers outline the most significant issues for protected areas; seven workshop streams – the core of the programme – exploring in depth common issues faced by protected areas throughout the world; two days of field trips in the protected areas of KwaZulu-Natal Province; and plenary sessions to distil the findings and recommendations from Workshop Streams and Cross-Cutting Themes.



Gina Doggett/IUCN

Help Protect Coral Reefs

Coral Reefs are vital ecosystems.

They shelter a vast amount of marine biodiversity and sustain millions of people through the services they provide: food, tourism and coastal protection. Unfortunately, reefs worldwide are under tremendous pressure and are struggling to survive.

You can help protect these "rainforests of the sea" by contributing to the Coral Reef Fund. Your gift will help protect and manage the

With your support, the Coral Reef Fund will promote eco-friendly tourism, create local jobs, advance sustainable fishing techniques, and educate communities on the importance of reefs.

Find out how you can help!
www.coralreeffund.org

ICRAN
International Coral Reef Action Network

UNITED NATIONS FOUNDATION

CORAL *jewels*

MELINDA KIMBLE stresses the importance of conserving coral reefs and reports on a new initiative to do so

Coral reefs are among the world's most spectacular underwater environments. Often called 'rainforests of the sea', these natural wonders are complex ecosystems supporting a remarkable diversity of life – plant, animal and human.

Although coral reefs cover less than 1 per cent of the ocean floor, they are home to over 93,000 plant and animal species, and sustain more than 35 per cent of marine species in shallow ocean waters. Remarkably, marine scientists estimate that in excess of a million coral reef species remain to be identified. These undiscovered species may hold the key to medical advances in the treatment and cure of widespread diseases like cancer and HIV/AIDS.

Coral reefs also play an important role in sustaining local communities. In more than 80 developing countries, countless communities rely heavily on them for income security and nutritional sustenance. In fact, 20 per cent of the world's population relies mainly on them for food. One square kilometre of healthy coral reef can produce 15 tonnes of food per year – enough for more than 1,000 people. Sustaining the health of the reefs is therefore critical to sustaining these communities.

20 per cent of the world's population relies mainly on coral reefs for food

Income and employment

Healthy coral reefs also have significant value for local economies. Their captivating beauty can sustain a growing and increasingly diverse tourism market that has the power to generate income and create employment opportunities. Specifically, sustainable tourism can create a marine and coastal environment in which coral reefs can thrive and local communities benefit from their revenue-generating resources.

Unfortunately, pollution, destructive and non-sustainable fishing techniques, coastal development, the souvenir trade and other threats are taking their toll on the reefs and the people who depend upon them. Although they have coped with changes in the global environment for millions of years, their capacity to continue doing so is now seriously threatened by these human impacts. As a result, 60 per cent of the world's coral reefs have been seriously damaged or completely destroyed.

In response to these threats, the United Nations Foundation and the International Coral Reef Action Network (ICRAN) – in which UNEP plays a prominent part – launched the Coral Reef Fund in May 2003 to help protect and manage the 285,000 square kilometres of coral reef around the world, all of which are damaged or in some way threatened. Established in 2000, ICRAN is a global partnership of coral reef experts working to halt and reverse the decline in the health of the world's coral reefs.

Environmental responsibility

Working with local and indigenous communities, ICRAN will promote environmentally responsible activities near reefs, including eco-friendly tourism and sustainable marine fishing, and will also provide funding to monitor threatened reefs. With moneys raised through the Coral Reef Fund, ICRAN will continue to promote opportunities for creating jobs, training and educating communities, and exchanging ideas and knowledge on reef management to ensure the future of these ecosystems.

The UN Foundation, with ICRAN, launched the fund with a $250,000 contribution from the Richard and Rhoda Goldman Fund, which the Foundation has matched. The UN Foundation will match any additional contributions over $250,000 made by other funders, including individuals, foundations, corporations, government agencies and non-governmental organizations ■

Melinda Kimble is Vice President for Program of the United Nations Foundation.

Visit www.coralreeffund.org. The website provides visitors with more information on the global status of reefs, links to partner organizations, an online donation mechanism, and a list of ten ways to protect coral reefs.

REEF *knots*

MARK COLLINS describes the global partnerships created to conserve and manage reefs, and recommends that they should now be supported by a concerted, well financed international programme.

Coral reefs generate around $30 billion in goods and services to the world economy each year and about a billion people depend on them for food, income and livelihood. And yet conserving them is proving to be a complicated task, and much remains to be done to find the necessary finance.

At first sight this may seem strange. Very recent research at the UNEP-World Conservation Monitoring Centre (UNEP-WCMC) using satellite images from the National Oceanic and Atmospheric Administration (USA) has shown that marine protected areas (MPAs) cover about 30 per cent of the 284,300 square kilometres of the reefs documented in the Centre's World Atlas of Coral Reefs – and most of these specially designated areas have Heritage designation.

The problem is the distribution of these areas around the world. Seventy per cent of all the coral reefs protected by national and international conservation designations are found in just one MPA and World Heritage site – the Australian Great Barrier Reef Marine Park. The remainder are scattered over more than 670 MPAs, mostly covering less than 5 km². These are too small and fragmented to ensure that the reef ecosystems, and their living components of corals, fish and invertebrates, are adequately protected over the long term – particularly in light of the threats from climate change, bringing more tropical rain and warming of the seas.

Surprisingly, coral reefs are only mentioned twice in the Plan of Implementation adopted at last year's World Summit on Sustainable Development (WSSD) in Johannesburg. On the face of it, this seems a serious underemphasis. The physical economies of several island nations that depend on reefs for their political and economic stability – is intrinsically linked to these ecosystems, which cover just 0.2 per cent of the world's ocean floor, an area roughly the size of New Zealand. Their, of course, is in addition to reefs' well-documented role in generating jobs, protecting against coastal erosion, creating safe harbours and safeguarding homes, food resources, landscapes and cultures around much of the globe.

Widespread damage

Closer examination, however, shows that large parts of the Plan have implications for these vulnerable ecosystems. All reefs of which are at risk of permanent, irreversible damage – the Global Coral Reef Monitoring Network tells us – from overfishing, habitat destruction, coral diseases, bleaching caused by climate change, and eutrophication caused by nutrient runoff from the land. The WSSD call for a globally representative system of MPAs to be established by 2012, for example, is clearly an important target for protecting the reefs and using them sustainably. When establishing and managing the world's coral reef parks we must design them flexibly and ensure that they are adapted to local needs. Some reef ecosystems need to be closely guarded as sanctuaries or nurseries, and fisheries in these, allowing minimum or no human interference to ensure that it survives in pristine condition. Elsewhere, a more subtle multi-purpose, multi-sectoral approach may be appropriate.

When establishing and managing the world's coral reef parks we must ensure that they are adapted to local needs.

UNEP Coral Reef Unit. Soon she will be joined by the ICRI Secretariat, which is being hosted by the United Kingdom and the Seychelles for the next two years. Each of these communities has a particular role in protecting and managing coral reefs - but their combined impact on scientific, environmental and policy issues will be much greater than the sum of their individual work. Similar centres and approaches will be needed further to facilitate action on the socio-economic issues related to coral reefs and on putting the 'WEED' Plan of Implementation into practice.

Success stories

The international team is now fairly strong - we know where the reefs are, which are protected and to what degree. We also have a good idea of the importance of reefs to local coastal communities, to island nations, tropical regions, and to the world as a whole. Collaborative partnerships have been formed to share knowledge, experience and human resources. Project priorities are in place and ready to be rolled out.

It is now time for concerned governments, the Global Environment Facility, international foundations, philanthropists and others to recognise what has been achieved and go even beyond. There is no time to lose in giving coral reefs a high priority and in providing the financial resources needed to make a difference. ■

Mark Collins is Director of the UNEP World Conservation Monitoring Centre.

UNEP/Topham

Harry Latos/UNEP/Topham

Brief window for BIODIVERSITY

RUSSELL A. MITTERMEIER and **GUSTAVO A.B. DA FONSECA** say that protected areas are cornerstones for biodiversity conservation and argue that efforts should be concentrated on particularly biodiverse ones

Today's extinction rates are such that we have only a brief window of opportunity before many important plant and animal species are lost for ever. Much has been written about this impending crisis, but now the major theatres of imminent extinctions can be pinpointed with a high degree of precision. These are 'biodiversity hotspots', the areas that claim the largest number of endemic species and that have already lost over 70 per cent of their original vegetation. Conservation International (CI) focuses on these as well as key marine ecosystems and the 'high biodiversity wilderness areas' – vast, largely intact, areas that also harbour high levels of diversity and endemics, including the large tropical rainforest blocks of Amazonia, the Congo region and New Guinea.

The hotspots and high biodiversity wilderness areas cover only 7.5 per cent of the Earth's land surface – but contain an astounding 62 per cent of all plants and at least 55 per cent of all mammals, birds, reptiles and amphibians as endemics. Clearly, if we are to conserve biodiversity, these areas must receive a proportionately large share of the resources invested in conservation internationally. Unless we focus on them we will lose a major portion of global biodiversity regardless of how successful we are in other less diverse places. Parks, reserves and other types of protected areas – including the World Heritage sites – constitute the single most important tool to counter human-induced extinctions. Without a representative and well-managed global network of protected areas, we will not be able to stem the tide. Almost without exception, the most endangered species will not survive outside protected areas. This is particularly true for biodiversity hotspots: only about 40 per cent of their area is under some form of protection, representing a mere 4 per cent of the original extent of these ecosystems. This year's World Parks Congress (WPC) uniquely spotlights the importance of protected areas, and the urgent need to create new – and manage existing – ones. We believe that the protected areas are so vital that it is no longer adequate to hold such an important gathering only once every decade. We propose that IUCN–The World Conservation Union and its World Commission on Protected Areas change its frequency to once every five years, and that we use these meetings not just to discuss new directions but to monitor progress over the previous period.

Principal objectives

We also propose 13 other points for particular consideration by the international community.

1 Although more than 10 per cent of Earth's land area is currently within protected areas, many were established for scenic values, and not necessarily for biodiversity conservation, which must be recognized as one of their principal objectives. The Center for Applied Biodiversity Science (CABS) at CI has convened several dozen experts to produce the first-ever global gap analysis of protected areas. This has been specifically aiming at providing some of the most important content for the Parks Congress and to generate tangible goals for the international community.

2 If terrestrial coverage is inadequate, marine protected area coverage is much more so. Only a fraction of a percentage of the oceans is under protected status, while 'no-take zones', the equivalent of terrestrial parks and reserves, are ludicrously small. At sea we are a decade or more behind what has been done on land.

3 Protected area coverage for freshwater systems, notably rivers and lakes, also lags behind and requires

G Mingasson/UNEP/Topham

World Heritage sites are located within 16 of the 25 global biodiversity hotspots, which are a primary strategic target for CI's work. CI and the UN Foundation have formed a partnership for a three-year, $15 million initiative to work on projects within natural World Heritage sites. The UN Foundation works to sustain sites that are particularly important for their biological values. Through CI, the World Heritage Centre will be able to tap into existing conservation networks and increase on-the-ground conservation capacity.

much further attention, especially given the growing importance and worldwide scarcity of freshwater resources.

4 Some feel that we should focus only on improving the management of existing protected areas. But we strongly believe that, given the short window of opportunity before us, now is also the time to create new parks and reserves in priority areas identified by the global gap analysis and various other studies.

5 New areas often go through a phase as 'paper parks' – officially created yet not given adequate management. However, our research reveals that paper parks are important in securing areas that are subject to rapidly advancing development frontiers, even if it takes time for them to be adequately staffed, funded and managed.

6 The selection of new areas should be strongly based on biodiversity criteria, especially in areas like the hotspots. The global gap analysis developed for the WPC is the first study ever to use species as the basis for identifying major gaps in the coverage of protected areas worldwide.

7 The most important protected areas, old and new, need special recognition through existing mechanisms, the most notable of which is the World Heritage Convention. The emphasis placed by the United Nations Foundation on the importance of World Heritage sites in biodiversity conservation has been especially welcome (see box).

8 Protected areas need to be created at a variety of different levels, including federal, state, and even municipal ones. This is especially true in countries where federal agencies may feel overextended, but where states

Stakeholders at all levels should be engaged in establishing and managing protected areas

may be excited about the possibility of having their own areas. Privately protected areas can also play a significant role in efforts to increase coverage; many models for this already exist, such as the Nature Conservancy in the United States and the Private Natural Heritage Reserves (RPPN) network in Brazil. Demarcated indigenous territories also need more attention as a form of protected area.

9 Protected areas need to be linked in broader landscapes through conservation corridors to secure their long-term ecological viability. Protected areas themselves must be considered the 'core areas' or the 'anchors' around which such corridors should be built, rather than as a secondary consideration to restoration of the intervening spaces.

10 The critical role of protected areas in maintaining key ecosystem services such as watershed integrity and carbon sequestration needs much further attention, especially when justifying the creation of new areas and seeking financial support both for them and for existing ones. The role of marine and freshwater protected areas in this will be especially important.

11 Protected areas should be seen as an essential component of reducing poverty rather than as antithetical to it. Stakeholders at all levels should be engaged in establishing and managing protected areas, and should benefit from them; they should also recognize their roles and responsibilities. Protected areas should be a key component of local development strategies – but this should be a structured process that provides long-term benefits for all, but not in a way that diminishes the value of parks and reserves for biodiversity protection and future generations.

12 Funding for protected area management is recognized to be woefully inadequate at the global level. More resources are needed for both short-term and long-term activities, and due consideration should be given to creating financial mechanisms, like trust funds, to guarantee basic management costs in perpetuity. A few such mechanisms now exist (such as CI's Global Conservation Fund) but more are needed.

13 Last but not least, the global community of protected area professionals needs to do much more to highlight the importance of the areas, and to demonstrate how they are cornerstones of global and regional development.

Biodiversity conservation is unquestionably one of the most critical issues of our time. All biodiversity is important to all people and each nation should do everything possible to conserve its living natural heritage – for both its own intrinsic value and for the critical role it plays in long-term sustainable development ■

Russell A. Mittermeier is President of Conservation International and Gustavo A.B. da Fonseca is its Executive Vice President and Executive Director for its Center for Applied Biodiversity.

BOOKS & PRODUCTS

A new youth and children's strategy called Tunza – a Swahili word meaning 'to treat with care and affection' – has been launched by UNEP. An inaugural Tunza International Youth Conference was held in the Russian town of Dubna in August and it will be followed by further conferences in New London, Connecticut, United States of America next year and Sydney, Australia in 2005. An international tree-planting project, entitled Plant for the Planet, was launched in February, and the first issue of a new young people's magazine, also called *Tunza* – available at www.ourplanet.com – came out on World Environment Day.

Boris Gromov, the Governor of the Moscow Region which helped to organize the Russian Conference, said: 'in order to achieve results there is a real need not only to act every day, but to plan for the future by educating and training an environmentally sound next generation' ■

Wildlife Works simultaneously produces fashionable T-shirts and conserves a protected area. The company – which calls itself 'the world's first business designed from the ground up around a consumer brand that stands for wildlife conservation' – was born when a San Francisco management consultant, **Mike Korchinski,** was wondering how to relieve pressures on the environment, while on safari in Kenya.

Proceeds from the shirts – which are made from organic cotton and other environmentally friendly fabrics – have gone to create the 32,000-hectare **Rukinga Wildlife Sanctuary** in Kenya and to provide jobs and build schools for the local people. A factory next to the reserve employs people from the community to make their products. As a result, the company reports, poaching has stopped.

The T-shirts are sold in some 200 stores and boutiques, and have been worn by stars including **Catherine Zeta Jones, Helen Hunt, Charlize Theron, Kristin Davis, Alyssa Milano, Lucy Lawless** and **Lisa Nicole Carson.**

Richard Leakey, the leading conservationist and former Director of the Kenya Wildlife Service, says: 'I am convinced their for-profit wildlife conservation venture represents an important new direction for conservation, tying the conservation of wildlife and habitat to sustainable development in rural Kenya' ■

A new CD produced by ***Hamner and Associates*** *– 'Greatest Hits of Cleaner Production, Pollution Prevention and Sustainable Business' – is a collection of the best non-copyright publications and software in its field. It is intended for business managers, government officials, development programme managers, teachers and students. It contains enough information to help any organization dramatically improve its efficiency, reduce waste and pollution, and operate in a more environmentally sustainable way* ■

Indian scientists have announced a way of making plastics biodegradable – by exploiting the 'sweet tooth' of bacteria. A team at the National Chemical Laboratory in Pune say they added small amounts of sugar to the plastics during manufacture – and that as a result they started to degrade within days, instead of lasting for decades in landfills ■

---

hp invent

Focus on Your World

BAA

One hundred of the best pictures from UNEP's 'Focus on Your World' photo competition have gone on indefinite display at Heathrow's Terminal Four in an exhibition sponsored by **Hewlett Packard.** Other airports are being approached to take similar exhibitions. The pictures, along with others from the competition, can be viewed at www.focusonyourworld.com ■

Marianne Thomas/UNEP/Topham

The Chacabuquito run-of-river hydropower project, high in the Chilean Andes, in June 2003 began delivering the first ever verified greenhouse gas emission reductions in the developing world, intended for the Clean Development Mechanism of the Kyoto Protocol. The project is part of the portfolio of the Prototype Carbon Fund, created with contributions totalling $180 million from the World Bank, six governments and 17 companies ■

Conservation amid CONFLICT

EULALIE BASHIGE BALIRUHYA

describes an experience of protecting World Heritage sites besieged by a series of wars

Straddling the equator, with a range of ecosystems, the Democratic Republic of the Congo (DRC) is one of the most biodiverse countries in the world. Its 2.3 million square kilometres glory in low-altitude tropical forests and rainforests, afromontane forest, open forests (such as *miombo*), savannah, and mangroves, as well as majestic waterfalls, hotwater springs, picturesque grottoes and idyllic landscapes.

It boasts 11,000 plant, 409 mammal, 1,086 bird, 1,069 fish and 152 snake species. Among them are such rare ones as the dwarf chimpanzee or bonobo, the mountain gorilla, the eastern lowland gorilla, the northern white rhino, the okapi, and the Congo peacock.

Conservation pioneer

The country is also proud to be a pioneer of African nature conservation. Its territory includes the oldest park in Africa, the Parc Albert (now the Virunga National Park) established in 1925, and it has given humanity the World Charter for Nature.

The Congolese Institute for the Protection of Nature (ICCN), established in 1975 – a unique example of the centralization and management of protected areas by a scientifically and technically oriented public enterprise – has a remit to:

- protect the fauna and flora in the wildlife parks and other protected areas;
- encourage scientific research and tourism in these areas while emphasizing the principles of conservation;
- manage the data collection stations both inside and outside the parks;
- ensure the socio-economic development of the communities in the protected areas in the interests of equity and security.

It manages seven national parks and some 30 hunting and wildlife reserves – of which 14 are operational – covering more than 180,000 km², nearly 9 per cent of the country. Five of the protected areas have been raised to the status of World Heritage sites (see box) because of the wealth of their biodiversity.

The ICCN has encountered a range of problems in managing these areas:

- commercial poaching (bushmeat, ivory, skins, horns and domestic pets);
- lack of infrastructure, material and financial resources;
- lack of training and human resources;
- lack of management and development plans;
- absence of community development policy;
- difficulties in communicating and managing information.

On top of these traditional problems we are now faced with the aftermath of successive armed conflicts. Three of them – the 1994 inter-ethnic war in Rwanda; the civil war which resulted in the victory of the Alliance of the Democratic Forces for the Liberation of Congo which brought Laurent Désiré Kabila to power on 17 May 1997; and the continued violence of 1998 – have all damaged the efforts to conserve DRC's rich biological diversity.

The civil war in Rwanda caused a tide of nearly 2 million refugees who literally marched over the Virunga and Kahuzi-Biega National Parks, poaching and causing immeasurable deforestation.

The conflicts of 1996 and 1998 exacerbated and enlarged the destruction of ecosystems, and led to illegal exploitation and systematic pillaging of resources both on land (such as coffee, timber, bushmeat, ivory, etc.) and underground (coltan, gold, diamonds). Weapons proliferated and ICCN guards and managers were murdered by marauding gangs.

To save the threatened World Heritage sites, the ICCN proposed a project to support the management of biological diversity in times of conflict to the World Heritage Centre. The four-year project has an overall budget of $4,180,957, of which the United Nations Foundation contributed $2,902,024. It aims to:

- provide support for World Heritage sites in DRC: bonus payments to guards; equipment;
- build capacity: train guards; strengthen anti-poaching law; bio-monitoring; community development;
- provide political and diplomatic support for conservation through the international community: diplomatic missions to urge antagonistic regimes to cooperate and consider conservation sites as neutral areas;
- seek funding for sustainable financing of conservation;
- draft a document on the lessons learned about site management in times of armed conflict. ▸

SIGNS OF SUCCESS

- The mountain gorilla population has risen by 10 per cent – and white rhinoceros by 33 per cent.
- The initiative is successfully demonstrating the value added by the United Nations in conserving biodiversity during armed conflict.
- The UN Foundation's investment has leveraged parallel funds of over $350,000 from the Belgian Government, and over $1 million from GTZ, Wildlife Conservation Society, WWF, the Rhino Foundation and others.

World Heritage site	Area (km²)	Year established
Virunga National Park	8,000	1925
Garamba National Park	5,000	1938
Salonga National Park	36,000	1970
Kahuzi-Biega National Park	6,000	1970
Okapi Wildlife Reserve	13,700	1992

Lori Nichols/UNEP/Topham

Lessons have indeed been learned. We have found that support given directly in the field is an efficient means of safeguarding biodiversity in times of armed conflict. Diplomatic missions have meanwhile made it possible to maintain contact between warring sides and achieve some unity in coordinating antagonistic governments.

There has been collaboration with partners that are already well established in different sites – with local knowledge and mechanisms for channelling funds to them – so as to make efficient use of funds. Meanwhile the ICCN and its partners endeavour to collaborate through consultation at both national and site level.

Last year's World Summit on Sustainable Development in Johannesburg highlighted the biodiversity of the Congo Basin and helped to ensure the earmarking of funds to safeguard the region's forests. But the crisis in DRC still requires further support for natural resource conservation from the international community.

The ICCN, backed by the Government, aims to increase the proportion of the country devoted to conservation to 15 per cent. Sites must be declared protected areas, including the forests of Lomako, Itombwe, Lomami-Lualaba and Ngiri, and the Ishango caves.

Laws, plans and partners

Meanwhile the organization is involved in updating the law on nature conservation, in developing a national conservation strategy and in drawing up protected area development and management plans. It has plans to restructure and to train its staff. With the renewal of bi- and multilateral cooperation, it will acquire more partners.

It is considering setting up a consultation platform, the Coalition for Conservation in the Congo (CoCoCongo), and a data management and cartography unit with a view to improving coordination with its various partners. It believes this will provide a new springboard, after the recent period of turmoil, for the sustainable management of the country's rich biological diversity ■

Eulalie Bashige Baliruhya is Director General of the Congolese Institute for Nature Conservation (ICCN).

NEWS

The Cartagena Protocol on Biosafety enters into force in September 2003, following its ratification by its 50th country – the island state of Palau. The Protocol – which was adopted by the member governments of the Convention on Biological Diversity in January 2000 – sets out the first comprehensive regulatory system for ensuring the safe transfer, handling and use of genetically modified organisms (GMOs), with a specific focus on their movements across national boundaries.

'This new regime promises to make the international trade in GMOs more transparent while introducing important safety measures that will meet the needs of consumers, industry and the environment for many decades to come,' said Klaus Toepfer, UNEP's Executive Director. 'The Protocol institutionalizes the precautionary approach and establishes a rigorous advanced informed agreement procedure.'

UNEP – with funding from the Global Environment Facility – is overseeing a $38.4 million scheme to help developing countries assess the potential risks and rewards of genetically modified crops. The largest capacity-building project ever conceived in the field of biosafety, it is helping up to 100 nations to develop the scientific and legal skills needed to evaluate the health and environmental issues surrounding GMO imports, and to handle them safely ■

Twenty-four new sites were added to the World Heritage List at the 27th session of the World Heritage Committee in Paris, France, from 30 June to 5 July 2003. Two of them are considered among the most important regions in the world for biodiversity. These are: the Three Parallel Rivers of Yunnan Protected Areas in China, the epicentre of Chinese biodiversity and one of the Earth's richest temperate regions, where the Yangtse, Mekong and Salween rivers run roughly parallel, north to south, through steep gorges; and the extension of the Central Amazon Conservation Complex – which includes Jaú National Park, which was inscribed on the World Heritage List in 2000 – and is home to the world's largest array of electric fish.

Others include the rich and diverse Uvs Nuur Basin in Mongolia and the Russian Federation; the pyramid-shaped, wooded Monte San Giorgio in Switzerland which has outstanding marine fossils; the forested Phong Nha-Ke Bang National Park in Viet Nam, which includes 65 kilometres of underground caves and rivers; the Purnululu National Park in Western Australia, which contains the beehive-shaped cones of the Bungle Bungle range; and the United Kingdom's Royal Botanic Gardens at Kew ■

Green, *red or black?*

DJUNA IVEREIGH says that the true value of protected areas is now beginning to be assessed, and describes innovative ways to increase their revenue

Take a moment to view a park through the eyes of a developing nation finance minister. Chances are you see more red than green. Income from visits and extractive use (if allowed) rarely matches management expenses. Most protected areas thus draw on precious government funds.

Most accounting systems do not account for the 'free' goods and services that these areas provide as, for example, regulators of the climate or providers of clean water. And their roles as stores for traditional foods and medicines, repositories of scientific wonder – and refugia for ancient spirits and stressed-out city-dwellers – are almost impossible to value in money.

Economic valuation, however, can help protected areas thrive. An area with proven economic value clearly becomes a stronger candidate for conservation funds. Many donors, in fact, now insist upon economic analysis before considering support.

Non-market values

The past 20 years have seen expanding recognition of the variety of costs and benefits of protected areas. Assessors once tallied up only direct-use benefits like timber, wild game and recreation, but now the balance sheet has grown to include non-market values (for example biodiversity), environmental services (such as erosion control) and even 'non-use' benefits (their intrinsic value to people who will never visit or physically benefit from them). Similarly, costs beyond direct management costs – such as the impacts of natural damage and lost opportunities for development and extractive use – are now brought into the equation.

New techniques for measuring these costs and benefits have emerged. Studies that evaluate simple market-based values for goods and services from protected areas – such as the direct values of tourism revenues or harvested foodstuffs – are still used. Broader ones, however, use proxies to estimate values of goods and services not actually bought or sold: these include, for example, the cost of replacing a service no longer available, such as building an oil-fired power station to replace a silted up hydroelectric reservoir.

Economists believe that the recreational value of protected areas is not adequately reflected by entrance fees, and take into account the time spent on each visit and on such costs as transport, food and accommodation. One recent study concludes that the fees typically amount to just 0.01 to 1 per cent of what visitors pay to make the trip. Surveys also assess the hypothetical willingness to pay to protect a park resource.

Rising awareness of the value of protected areas is driving park managers to see their resources in the broader context of market forces, to rethink recreational user fees, and to implement ways of generating revenue based on the 'user pays' concept. The International Institute for Environment and Development recently identified 280 actual and proposed payment plans for environmental services. Some parks now charge recreational users in keeping with guests' ambitions to visit, and endeavour to keep most funds on site. The Galapagos Islands has a sliding-scale entrance fee for the park that ranges from $6 for Ecuadorians to $100 for most foreign adults. Half the tourism revenue goes to manage the park and the surrounding marine reserve.

Localization means making people less dependent by helping them put their skills and resources to use

Not every park, however, can justify steep price hikes. Researchers predicted that Indonesia's Komodo National Park would generate most revenue by multiplying gate fees some 15 times over the existing rate of around $0.90. But further assessment indicated that this would be entirely offset by the damage to the local economy caused by a sharp fall in visitor numbers. Higher fees will now be introduced gradually.

The Kyoto Protocol's Clean Development Mechanism turns developing nations' forests into 'carbon credits', which can be leased to developed countries to offset excess emissions. This offers great potential benefits to forest parks, although the scale and complexity of the negotiations have slowed progress.

In Costa Rica land title holders – most commonly private farmers – are paid $210 per hectare over five years for forest conservation, or $538 for reforestation. By 2002, 200,000 hectares were under such contracts with another 800,000 pending.

Meanwhile Costa Rica's La Esperanza Hydroelectric Project pays the Monteverde Conservation League to safeguard the watershed that protects its dam and turbines from over-sedimentation and flash floods. The 99-year contract provides roughly $30,000 each year to manage 3,000 hectares of forest: the amount is linked to power output to boost the incentive for managing the watershed effectively. Costa Rica saw another pioneering scheme in 1991 when its National Biodiversity Institute provided biological samples to the chemical company, Merck, for testing in exchange for $1 million, and a share of royalties from any drugs developed. Though no promising drug material was found, the agreement established an interesting model.

Prime challenge

Many of these strategies have blossomed over the last decade, yet apart from recreational fee revisions, they are hardly ever implemented. A prime challenge for the next decade is to marry the lessons of economic valuation with compensation for environmental services to get green areas into the black ■

Djuna Ivereigh is a freelance journalist based in Indonesia.

'We are witnessing a growth of an ecological awareness which needs to be encouraged so that it will lead to practical programmes and initiatives. An awareness of the relationship between God and humankind brings a fuller sense of the importance of the relationship between human beings and the natural environment, which is God's creation and which God entrusted to us to guard with wisdom and love.'
Common Declaration by Pope John Paul II and the Ecumenical Patriarch Bartholomew I

'Do not use anything belonging to nature such as oil, coal or forests, at a greater rate than you can replenish it. For example do not destroy birds, fish, earthworms and even bacteria which play vital ecological roles – once they are annihilated you cannot recreate them.'
Swami Vishokesha Tirtha (one of the 12 hereditary leaders of Vedic teachings in India)

'Not only do we have to respect the lives of human beings, but we have to respect the lives of animals, the vegetable and mineral realms and the earth itself.'
Thich Nhat Hanh, Vietnamese Buddhist monk

'Islam says that human beings should not use what they don't need. And that they should plan their resources for a future use.'
Sheikh Mohammad Hossein Fadlallah, one of the world's leading Shia Islamic scholars in the world, Beirut

'We have a responsibility to life, to defend it everywhere, not only against our own sins but also against those of others. We are all passengers together in this same fragile and glorious world.'
Professor Rabbi Arthur Hertzberg, Vice President of the World Jewish Congress

Keeping faith with nature

VICTORIA FINLAY says that all the world's major religions agree on the importance of conservation and describes how they are taking action to put their beliefs into practice

One day the Prophet Muhammad was travelling along a river when it became time for prayer. His followers rushed into the river to perform their ritual ablutions but the Prophet just filled a little bowl with water to wash. They asked him why, surrounded by a whole river, he used so little water. He answered that just because there was plenty it did not mean we had the right to waste it.

Buddhists in Japan tell a comparable story of how the Buddha once received a donation of 500 new robes for his followers. Immediately he started planning what to do with the old ones. They would be used for bed-sheets, he decided. The old sheets would become towels. And the old towels would be used as cleaning rags. Everything should be used and reused.

Sacred elements

If there is one key area of agreement between all the world's religions it is that it is important to look after the Earth. People brought up in Baha'i, Buddhist, Christian, Daoist, Hindu, Islamic, Jain, Jewish, Shinto, Sikh or Zoroastrian environments are all likely to have been taught, implicitly or explicitly, to look after the environment because at least some elements of it are 'sacred'.

Religions between them own approximately 7 per cent of the Earth's inhabitable surface, have influence over more than half of the world's schools, and act as the main community and spiritual centres for more than 4 billion people. They are immensely powerful in most parts of the world, with followings and influence that non-governmental organizations (NGOs) and environmentalist movements could not even dream of.

Not surprisingly therefore, the World Bank, parts of the United Nations, several governments, the Worldwide Fund for Nature (WWF) and other conservation groups all have begun to work with faith leaders on environmental projects.

Cultural reminder

In Mongolia, for example, the World Bank and other international organizations are sponsoring a project to translate and publish Buddhist *sutras* about sacred mountains into modern Mongolian. The plan is to use the texts to reconsecrate the mountains and thus remind the local people of their traditional responsibilities not to log or hunt in certain areas.

Urpmakshpora Champion/UNEP/Topham

Enkhbayer, the country's Prime Minister and an active Buddhist, says: 'Which will be the more powerful argument? That you can't log this mountain because the Government tells you not to or because it is holy? In my experience there is no question.'

WWF was one of the first environmental groups to work explicitly with religious leaders. HRH the Duke of Edinburgh, then its International President – who put forward the idea in 1986 – says: 'It seemed pretty obvious. If your religion tells you (as it does in Christianity anyway) that the Creation of the world is an act of God, then it follows naturally that if you belong to the church of God then you ought to look after His Creation. I was not quite sure what the other religions believed about the creation of the world but I guessed that they had similar traditions.'

Despite considerable internal opposition, WWF took up the idea, and hosted a meeting of leaders of five major religions to talk about environmental issues. It turned out that each religion did indeed have its own conservation policy, even if most had never made it explicit before. The meeting succeeded partly because there was no attempt to get universal agreement on any particular point – no attempt to stem the diversity of theological beliefs.

If there is one key area of agreement between all the world's religions it is that it is important to look after the Earth

Statements of commitment

Since then, WWF's network for religions and ecology – which later became the independent Alliance of Religions and Conservation (ARC) charity – has grown to include 11 major faiths. Each, for the first time, has issued statements about its commitment to ecology and Creation.

Anglican Churches have transformed annual harvest festivals into lessons about conservation; Sikh leaders decided that the 300-year cycle starting in 1999 would be the Cycle of Creation (the last one was the Cycle of the Sword). Muslim leaders in Tanzania persuaded fishermen not to use explosives because it is against the Qu'ran, succeeding where violent threats by police had failed. And Shinto groups in Japan are seeking to buy wood and paper from European churches which own large tracts of forests that they have only recently put under Forest Stewardship Council certified management.

And by the end of this year, in a move instigated by ARC, representatives from Buddhist, Christian, Jewish, Hindu, Jain, Muslim, Sikh and Zoroastrian communities are scheduled to set up an International Interfaith Investment group, in which they will collaborate in ethical investment decisions to make their billions of dollars of assets work to give maximum ethical clout as well as yield good profits ■

Victoria Finlay is media consultant for the Alliance of Religions and Conservation (ARC) and co-author of Faith in Conservation, *just published by the World Bank.*

Make parks not war

REBECCA M. NYABATO

F

...Vera Okatsa from Kenya writes: